Remarks

The Applicant respectfully requests reconsideration of this application in light or this remark. In this response, no claims have been amended or canceled. No new claims have been added. Hence, claims 1 – 23 are pending in this application after the filing of this response.

35 U.S.C. §112 Rejections

The Office has rejected claims 1 – 9 under 35 U.S.C. §112 as purportedly being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Office states that, regarding claim 1, it is unclear whether "directory" and "inbound" gatekeepers are resource management gatekeepers, gateway resources, or another type of gateway. The Office has requested further clarification and explanation.

An exemplary embodiment is illustrated in Fig. 3. This particular implementation is a distributed hierarchical implementation that separates resource management functions from other gatekeeper functions (e.g., admissions control, address translation, etc.). See *Application*, p. 4. The implementation includes an inbound gatekeeper 3010, a directory gatekeeper 3020, and one or more resource management gatekeepers 3030 that each manage one or more outbound gateway resources 3040. *Id.* at p. 4 – 5; Fig. 3. Call attempts are sent to the directory gatekeeper 3020 for resolution to a gateway resource 3040. *Id.* The directory gatekeeper 3020 sends a request to a resource management gatekeeper 3030. *Id.* If there are gateway resources 3040 available to terminate the call, the resource management gatekeeper 3030 acknowledges the directory gatekeeper's request with the applicable gateway resource 3040, and the directory gatekeeper 3020 notifies the inbound gatekeeper 3010 of the available gateway resource 3040. *Id.*

Applicant believes that the foregoing explanation is sufficient clarification for one of skill in the art to make and use the invention of claims 1 – 9. As such, Applicant requests that the rejections under 35 U.S.C. §112 be withdrawn. However, if the Examiner would like further explanation, the Examiner is encouraged to call the undersigned.

Prior Art Rejections

The Office's rejections are based primarily on Bennefeld et al. (EP 1014633), hereinafter referred to as Bennefeld, and Wolff (US 6,067,545). Before addressing each claim rejection, a brief background of IP telephony is provided as well as an overview of the cited references to illustrate some fundamental differences between the present invention and the cited references. The brief background of IP telephony is taken primarily from Bennefeld.

In a typical IP telephony system, Gatekeepers set up incoming calls through outbound Gateways. *Bennefeld*, [0004]. Service providers typically include multiple Gatekeepers to handle the large load of many IP telephony calls. *Id.* [0006]. Load is distributed among the Gatekeepers using a subscriber (i.e., IP telephony customer) registration process, in which each subscriber is assigned to a particular Gatekeeper. *Id.* [0007]. The subscriber may be assigned to more than one Gatekeeper, so that if one Gatekeeper refuses to register the subscriber, the subscriber can register with another Gatekeeper. *Id.* The conventional approaches of static Gatekeeper assignment place all load on the Gatekeeper in a single Gatekeeper arrangement, and do not effectively distribute load in multiple Gatekeeper arrangements. *Id.* [0008].

Bennefeld attempts to solve the problems associated with distributing subscriber load among multiple Gatekeepers. *Id.* [0009]. As such, Bennefeld discloses a method and apparatus for distributing subscriber load ***among a plurality of Gatekeepers*** during the discovery and registration process. *Id.* [0001]. Each subscriber must register with a particular Gatekeeper of an IP telephony communication system. *Id.* In this way, Bennefeld manages subscriber load balancing across Gatekeepers. *Id.* [0030], [0031]. Subscribers are *registered* according to a selected technique. *Id.* [0047]. For example, subscriber's whose names begin with "j" may be registered with a Gatekeeper servicing subscribers with names beginning with "j". *Id.* [0051]. As another example, each gatekeeper may service a particular sub-domain, whereby, during the Gatekeeper discovery process, the subscriber is assigned to the Gatekeeper associated with the subscriber's sub-domain. *Id.* As such, Bennefeld provides a system for assigning subscribers to, and distributing subscriber load among, Gatekeepers in a network.

Wolff's system is analogous to Bennefeld, in that Wolff's server nodes are on the inbound side of a private network (See, e.g., Figs. 1A – 1C), and, like Bennefeld, load is being balanced over Wolff's server nodes (See, e.g., Abstract). Wolff's system performs load balancing ***across multiple server nodes*** that provide access to resources on the private network.

Wolff's method involves "load balancing [that] comprises ***detecting a change in an availability of the server nodes***". *Wolff*, Abstract, (emphasis added). After detecting a change in the availability of a server node, the client can remap a path through the multiple server nodes to get to the resource, thereby more effectively distributing I/O requests among the server nodes. *Id.*, col. 4, ll. 50 – 54. Alternatively, handling of requests for a particular resource (e.g., file systems 122B1-B3) can be transferred from an overloaded server (e.g., a slave server 104C) to another server (e.g., master server 106C). *Id.*, col. 8, ll. 10 – 34. As such, Wolff's system is concerned about choosing a server node (or similar inbound network access node) to handle client requests, such that load is balanced across multiple servers. Wolff's server nodes are therefore analogous to Bennefeld's Gatekeepers, in that both are inbound to their respective networks. Furthermore, both Bennefeld and Wolff are concerned with distributing load across the inbound Gatekeepers (for Bennefeld) or server nodes (for Wolff).

By contrast, embodiments of the present invention relate to ***identifying an available outbound gateway resource*** through which an inbound gatekeeper can initiate a requested call in an IP telephony network. To illustrate, in Fig. 3, resource management gatekeepers 3030 query associated outbound gateway resources 3040 to determine which of the gateway resources 3040 is available for initiating a call. Importantly, while Bennefeld and Wolff are directed primarily at the subscribers' (or clients') interaction with the ***Gatekeepers*** (or ***server nodes***), embodiments of the present invention are directed at the gatekeepers' interactions with gateway resources. In other words, embodiments of the present invention involve selecting an available outbound ***gateway resource*** through which a requested call can be routed, rather than balancing load across multiple inbound gatekeepers (or similar types of inbound network access server nodes).

A. <u>Rejection of claims 1 – 7, 10 – 16, and 19 – 23 under 35 U.S.C. §103(a)</u>

The Office has rejected claims Claims 1 – 7, 10 – 16, and 19 – 23 under 35 U.S.C. §103(a) as being unpantentable over Bennefeld in view of Wolff (US 6,067,545). Applicant traverses these rejections.

Independent claims 1, 10, and 19 recite, *inter alia*, "***dynamically determining an available gateway resource***", "querying a selected resource management gatekeeper to ***dynamically determine availability of gateway resources*** associated with the selected node", and "querying a first management gatekeeper ... to ***dynamically determine availability of gateway resources*** associated with the route", respectively. Each of the independent claims are therefore

directed at identifying an available gateway resource in a network through which a call can be initiated.

As discussed above, Bennefeld and Wolff are directed at distributing load across Gatekeepers and access server nodes, respectively. The Office acknowledges that Bennefeld does not teach dynamic alternate routing, but asserts that Wolff teaches a load rebalancing method, which can dynamically rebalance itself to optimize throughput by migrating client I/O request from over utilized pathways to underutilized pathways in gateways during operation. The Office is asserting that Wolff's rebalancing is equivalent to dynamically determining a gateway resource as recited in claims 1, 10, and 19. This is not the case.

Wolff's rebalancing "refers to the ability of a client enabled with processes in accordance with the current invention to ***remap a path through a plurality of nodes*** to a resource." *Wolff*, col. 4, ll. 50 – 53. Wolff's remapping involves selecting a node, such as a server node, in order to ***distribute load across multiple server nodes*** that provide access to resources on a private network. *See, e.g., Id.*, col. 23, ll. 12 – 14. The Abstract of Wolff is illustrative of the fundamental differences between Wolff's system and the dynamic gateway resource determination of the independent claims:

> "The network includes ***server nodes*** and resources. Each of the resources are coupled to ***at least two of the server nodes***. The method for load balancing comprises the acts of ***detecting a change in an availability of the server nodes***; defining ***a first set of available server nodes*** and a second set of available resources and selecting for each one of the members of the second set a corresponding member of the first set to server as the administrative server for handling an administrative portion of an I/O request for the corresponding resource of the second set. In an alternative embodiment of the invention the method for ***load balancing comprises the act of detecting a change in an availability of the server nodes***; applying a load balancing function to the network responsive to at least two attributes of each of the server nodes and the resources, responsive to the detecting act and assigning based on a result of the load balancing function each of the resources to a corresponding ***available server node*** responsive to the applying act." *Wolff*, Abstract.

In the above passage, Wolff clearly distinguishes between resources and server nodes. The server nodes can provide access to the resources. Wolff's load balancing involves ***determining server node availability***, and ***not*** resource availability. For example, Wolff's resources may be assigned to server nodes based on ***availability of the server nodes***; or, Wolff's server nodes may be made an administrative server based on ***availability of the server nodes***. Therefore, Wolff does not disclose dynamically determining an available gateway resource through which to initiate a call.

Furthermore, Wolff does not reasonably suggest dynamically determining an available gateway resource. Wolff's system is not relevant to an IP network in which multiple outbound gateway resources could be available for initiating a call. For example, Wolff's resources are clustered filesystems. According to Wolff, "[w]hat distributed I/O does require is ***a known repository*** for maintaining information as to the designated administrative server/node for each volume/resource." *Id.*, col. 23, ll. 12 – 14. Clearly, Wolff's clients will specify in their requests exactly which file(s) they are requesting. In other words, a file that is requested is the specific resource that a client is requesting in Wolff. By contrast, in the independent claims, multiple gateway resources could be available through which a call can be initiated in an IP telephony network.

For at least the foregoing reasons, Wolff and Bennefeld fail to teach or suggest all the claim limitations of any of independent claims 1, 10, and 19. Wolff and Bennefeld therefore necessarily fail to teach or suggest all the claim limitations of claims that depend from their respective base claims. As such, claims 1 – 7, 10 – 16, and 19 – 23 are believed to be allowable.

B. Rejection of claims 8 – 9 and 17 – 18 under 35 U.S.C. §103(a)

The Office has rejected Claims 8, 9, 17, and 18 under 35 U.S.C. §103(a) as being unpantentable over Bennefeld in view of Wolff, in further view of Harada et al. (US No. 5,956,339), hereinafter referred to as Harada. Applicant traverses these rejections.

Harada relates to an apparatus for routing individual packets from a sending node to a receiving node. *Harada*, Abstract; col. 3, ll. 23 – 26; col. 7, ll. 9 – 14. For each packet, the Harada apparatus calculates total channel capacity of each route and inter-node uniformity to choose a route for the packet. *Id.* at Abstract.

Claims 8 – 9 and 17 – 18 are directed at methods for choosing candidate routes for identifying available gateway resources on the chosen candidate routes. In claims 8 and 17, the

method involves selecting the candidate route at a predetermined ratio. In claims 9 and 18, the predetermined ratio is selected such that the likelihood of choosing each candidate route is substantially equal.

Because claims 8 – 9 and 17 – 18 include all the limitations of their respective base claims, they are directed at route selection within telephony network that accepts requests to initiate calls and identifies available gateway resources through which to initiate those calls. As such, Harada's packet routing system is not relevant to the route selection processes of claims 8 – 9 and 17 – 18.

For at least these reasons, Bennefeld, Wolff, and Harada fail to teach or suggest all the claims limitations of claims 8 – 9 and 17 – 18.

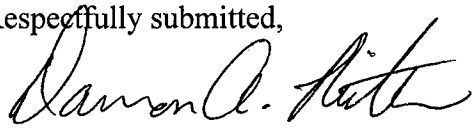
Conclusion

Applicant respectfully submits that the foregoing remarks have addressed all the issues raised in the Office action, have overcome the rejections, and that the pending claims are in condition for allowance. Accordingly, Applicant requests that the rejections be withdrawn and that a Notice of Allowance be issued forthwith.

Request for a Telephone Interview

If the Office believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-447-7739. No fees are believed due with this Amendment; however, the Commissioner is authorized to debit Deposit Account No. 06-0029 for any additional fee(s) or underpayment(s) under 37 CFR 1.16 and 1.17 or credit any overpayments.

Respectfully submitted,



Dated: August 3, 2006

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